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Atty. Dkt. No. 086142-0521

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Shoichi SAWA et al.

Title: INFLATOR

Appl. No.: 10/064,064

Filing Date: 06/06/2002

Examiner: K. Smith

Art Unit: 3644

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Under the provisions of 37 C.F.R. § 41.37, this Appeal Brief is being filed together with a check in the amount of \$330.00 covering the Rule 41.20(b)(2) appeal fee. If this fee is deemed to be insufficient, authorization is hereby given to charge any deficiency (or credit any balance) to the undersigned deposit account 19-0741.

**I. REAL PARTY IN INTEREST**

The real party in interest is TAKATA CORPORATION.

**II. RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any related appeals or interferences.

**III. STATUS OF CLAIMS**

Claims 1-20 are pending. Claims 6-9 are allowed. The rejection of claims 1-5 and 10-20 in the final Office Action mailed April 1, 2004, and in the Advisory Action mailed July 19, 2004, are appealed.

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**IV. STATUS OF AMENDMENTS**

No amendment to the claims has been filed subsequent to the rejection of claims 1-5 and 10-20 in the final Office Action mailed April 1, 2004.

**V. SUMMARY**

The invention relates to an inflator that generates gas for inflating an airbag. Claims 1, 2, 4, 10, 11, 17, and 20 are independent.

As shown in Figs. 1 and 2 and explained in the specification at paragraphs [0022] to [0025], an inflator 1 includes a bottle 3 configured to be charged with high pressure gas, a sealing plate 5 positioned to seal the bottle 3 at an orifice 15, and a receiving member 7 that includes a perforation structure 13a for breaking the sealing plate 5. One of the receiving member 7 and the bottle 3 includes a projection 43 extending only partially around a periphery of the receiving member 7 or the bottle 3. The projection mates with a groove 41 in the other of the receiving member 7 or bottle 3 when the bottle 3 and receiving member 7 are coupled together thereby preventing the receiving member 7 and the bottle 3 from moving apart. (Specification at para. [0032], [0034], and [0039].)

According to claim 1, prior to mating with the groove 41, the projection 43 is configured to move axially within the other of the receiving member 7 or the bottle 3. (Specification at para. [0038]-[0039].) According to claim 2, the other of the receiving member 7 and the bottle 3 includes a guide groove 49 for receiving the projection 43 when the receiving member 7 and the bottle 3 are being coupled together. (Specification at para. [0035].) According to claim 4, each of the receiving member 7 and the bottle 3 include a key groove 51. (Specification at para. [0036].) According to claim 10, the bottle 3 and the receiving member 7 have axial directions (shown in Fig. 3a) and are coupled together so that the axial directions are aligned. The bottle 3 and the receiving member 7 are prevented from moving apart in an axial direction by the engaged projection 43 and groove 41. (Specification at para. [0039].) According to claims 11 and 17, relative rotation of the bottle 3 and the receiving member 7 is prevented by a key 45 positioned in a key groove 47. (Specification at para. [0033], [0045].) According to claim 20, the receiving member 7 is configured to communicate with an airbag for a vehicle. (Specification at para. [0026].)

**VI. GROUND OF REJECTION**

Claims 1-5 and 10-20 are rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,568,663 (Brown) in view of U.S. Patent No. 2,421,228 (White).

**VII. ARGUMENT****Rejection under 35 U.S.C. § 103(a) over U.S. Patent No. 5,568,663 (Brown) in view of U.S. Patent No. 2,421,228 (White)**

Claims 1-5 and 10-20 are rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,568,663 (Brown) in view of U.S. Patent No. 2,421,228 (White). Of these claims, claims 1, 2, 4, 10, 11, 17, and 20 are independent. As explained further below, the rejections should be reversed because a *prima facie* case of obviousness has not been established. In particular, the cited references do not disclose, teach, or suggest all the features of the claimed invention.

By way of background, Applicants note that an object of the invention of White “is to provide a coupling which is simple to connect and disconnect.” (White at col. 1, lines 2-4.) Similarly, the coupling of Brown is disconnected by unscrewing the gas bottle 34 from the internally threaded cylindrical stem 26 and then plugging the air intake valve 24 with a plug. (Brown at col. 4, line 38-40, 44-46; col. 5, lines 4-6.) In contrast, the present application discloses an inflator configured so that the orifice member and the diffuser “are fixed to each other so as not to be removed from each other.” (Specification at para. [0040].) The specific differences between the claimed invention and the cited references are discussed below.

**Claims 1, 10, and 20**

The rejection of claims 1, 10, and 20 should be reversed because the cited references do not disclose, teach, or suggest a projection that “extend[s] only partially around a periphery” of the receiving member or the bottle as recited in claims 1, 10, and 20.

The Office Action acknowledges that Brown does not disclose “projections extending only partially around the periphery of the bottle” but contends that White teaches “a coupling used to modify a previously threaded coupling into a bayonet type connector (inherently having a projection extending only partially around the periphery of the bottle) for the purpose of a quick connection between two components and preventing leakage due to pressure of a fluid flowing there through.” (Office Action at pp. 2-3.) The Office Action further asserts that “[i]t

would have been obvious . . . to use the coupling as taught by White with the device of Brown in order to increase the speed in which the inflator may be attached.” (Office Action at pp. 2-3.) In the Advisory Action, the Examiner contends that the locking lugs 11 of White “clearly are not extending around the entire periphery of the device [so] it is considered inherent that the projections extend only partially around the periphery of the device.” (Advisory Action at p. 2.)

Applicants respectfully traverse the assertion in the Office Action that White inherently discloses a projection extending only partially around the periphery of the bottle. As shown in Fig. 1, White discloses a coupling element 1 “having a plurality of bayonet slots 6” and a coupling element 2 “provided with locking lugs 11 receivable in the bayonet slots 6 of element 1.” (White at col. 1, lines 36-46.) The coupling elements 1 and 2 are secured together when the coupling element 2 “is connected with the element 1 and turned so as to position the locking lugs 11 as indicated in Fig. 1.” (White at col. 1, line 59 to col. 2, line 1.) Thus, White discloses discrete locking lugs 11, as shown in Figs. 1 and 2. Nothing in the disclosure of White teaches or suggests that the locking lugs 11 “[extend] only partially around the periphery” of the coupling element 2 as called for in claims 1, 10, and 20, and the Office Action has not presented any reasoning supporting the assertion that such a feature is inherent. In relying on a theory of inherency, the Examiner “must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings” of the cited references. MPEP § 2112.IV.

For at least this reason, the cited references do not disclose, teach, or suggest all the features of the claimed invention. Reversal of the rejection of claims 1, 10, and 20 is respectfully requested.

Claims 3 and 12-16 depend from claims 1 and 10, respectively, and are allowable therewith without regard to further patentable limitations contained therein. Reversal of the rejection of claims 3 and 12-16 is respectfully requested.

#### **Claims 2, 11, and 17**

The rejection of claims 2, 11, and 17 should be reversed because the cited references do not disclose, teach, or suggest “a guide groove for receiving the projection” as recited in claim 2 or “a key groove” as recited in claims 11 and 17.

The Office Action contends that “Brown as modified further discloses a bayonet-type connector that is known to have a guide groove, a key groove and a key that rests in the key

groove to prevent releasing of the connection.” (Office Action at p. 3.) Applicants respectfully traverse the assertion in the Office Action that Brown as modified by White discloses a guide groove or a key groove.

There is no disclosure in Brown of a guide groove or a key groove, and White discloses only the bayonet slots 6. As shown in Figs. 1 and 4, the bayonet slots 6 are elongated holes or openings in a cylindrical socket 5 of the coupling element 1. The claimed invention, however, requires grooves. As commonly understood and as shown in Fig. 1 of the present application, a groove is a long, narrow channel or depression and is clearly distinguishable from the slots 6 of White, which are long, narrow apertures, as shown in Fig. 1 of White.

In the Advisory Action, the Examiner fails to address our argument regarding the differences between slots and grooves. Instead, the Examiner merely states that “[a]s can best be seen in Figure 4, White in fact discloses a guide groove for receiving the projection (at 6) and a key groove for maintaining the projection (i.e. the upturned portion in which the projection sits).” (Advisory Action at p. 2.) However, as discussed above, the slots 6 of White are clearly distinguishable from the claimed grooves.

For at least these reasons, the cited references do not disclose, teach, or suggest all the features of the claimed invention. Reversal of the rejection of claims 2, 11, and 17 is respectfully requested.

Claims 18 and 19 depend from claim 17 and are allowable therewith without regard to further patentable limitations contained therein. Reversal of the rejection of claims 18 and 19 is respectfully requested.

#### **Claim 4**

The rejection of claim 4 should be reversed because the cited references do not disclose, teach, or suggest “a key groove” as recited in claim 4. Moreover, the cited references do not disclose, teach, or suggest that “each of the receiving member and the bottle include a key groove” as recited in claim 4.

As discussed above in connection with claims 2, 11, and 17, there is no disclosure in Brown of a key groove, and White discloses only the bayonet slots 6. For at least the reasons set forth above, the slots 6 of White are clearly distinguishable from the claimed groove. Moreover, even if the slots 6 of White could be construed to be grooves, White does not have

key grooves both on the bottle and on the receiving member as called for in claim 4, an argument which the Advisory Action fails to address.

For at least these reasons, the cited references do not disclose, teach, or suggest all the features of the claimed invention. Reversal of the rejection of claim 4 is respectfully requested.

Claim 5 depends from claim 4 and is allowable therewith without regard to further patentable limitations contained therein. Reversal of the rejection of claim 5 is respectfully requested.

**VIII. CLAIMS APPENDIX**

An appendix containing a copy of the claims involved in the appeal is attached.

**IX. EVIDENCE APPENDIX**

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132.

**X. RELATED PROCEEDINGS APPENDIX**

Appellants are unaware of any related appeals, interferences, or decisions rendered by a court or the Board.

**XI. CONCLUSION**

In view of the foregoing, it is respectfully submitted that the rejections of record should be reversed.

Respectfully submitted,

Date 9/30/04

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APPENDIX

1. (Previously Presented) An inflator comprising:  
a bottle configured to be charged with a high-pressure gas;  
a sealing plate positioned to seal the bottle at an orifice; and  
a receiving member including a perforation structure for breaking the sealing plate,  
wherein one of the receiving member and the bottle includes a projection extending  
only partially around a periphery of the receiving member or the bottle and wherein the  
projection mates with a groove in the other of the receiving member or bottle when the bottle  
and receiving member are coupled together thereby preventing the receiving member and the  
bottle from moving apart; and  
wherein the projection is configured to move axially within the other of the receiving  
member or bottle prior to mating with the groove.
2. (Previously Presented) An inflator comprising:  
a bottle configured to be charged with a high-pressure gas;  
a sealing plate positioned to seal the bottle at an orifice; and  
a receiving member including a perforation structure for breaking the sealing plate,  
wherein one of the receiving member and the bottle includes a projection extending  
partially around a periphery of the one of the receiving member and the bottle and wherein the  
projection mates with a groove in the other of the receiving member and the bottle when the  
bottle and the receiving member are coupled together thereby preventing the receiving  
member and the bottle from moving apart; and  
wherein the other of the receiving member and the bottle includes a guide groove for  
receiving the projection of the one of the receiving member and the bottle when the receiving  
member and the bottle are being coupled together.
3. (Original) The inflator of claim 1, wherein the bottle extends into the receiving  
member.
4. (Previously Presented) An inflator comprising:  
a bottle configured to be charged with a high-pressure gas;

a sealing plate positioned to seal the bottle at an orifice; and  
a receiving member including a perforation structure for breaking the sealing plate,  
wherein one of the receiving member and the bottle includes a projection extending  
partially around the periphery of the receiving member or the bottle and wherein the  
projection mates with a groove in the other of the receiving member or bottle when the bottle  
and receiving member are coupled together thereby preventing the receiving member and the  
bottle from moving apart; and

wherein each of the receiving member and the bottle include a key groove.

5. (Previously Presented) The inflator of claim 4, wherein when the receiving member  
and the bottle are coupled together, the key grooves are aligned and a key is positioned in the  
key groove to prevent relative rotation of the bottle and the receiving member.

6. (Previously Presented) An inflator comprising:

a bottle configured to be charged with a high-pressure gas;  
a sealing plate positioned to seal the bottle at an orifice; and  
a receiving member having an axial direction and including a perforation structure for  
breaking the sealing plate,

wherein the bottle includes

projections formed on a peripheral surface of one end of the bottle extending  
in a peripheral direction, and

key groove formed in the peripheral surface of the one end of the bottle,  
extending in the axial direction;

wherein one end of the receiving member includes

a guide groove extending in the axial direction of the receiving member  
located on an inner surface at one end of the receiving member, the guide groove configured  
to guide the projection of the bottle when the receiving member is being coupled with the end  
of the bottle,

grooves extending in the peripheral direction, for mating with the projections  
after relative rotation of the receiving member and the bottle, and



key groove positioned to align with the key groove on the bottle after relative rotation of the receiving member and the bottle rotate;

a key configured to be inserted into the key grooves for preventing relative rotation of the bottle and the receiving member; and

wherein the end of the bottle is coupled with an end of the receiving member, and

wherein the bottle and the receiving member are connected to each other by the rotation of the bottle or the receiving member.

7. (Previously Presented) The inflator of claim 6, wherein the length of the key groove formed in the peripheral surface of the bottle is at least twice the length of the key.

8. (Original) The inflator of claim 7, wherein the length of the key groove formed in the inner surface of the receiving member is substantially greater than or equal to the length of the key.

9. (Original) The inflator of claim 8, wherein the inflator is configured so that the key is completely inserted into the key groove formed in the inner surface of the receiving member after the bottle and the receiving member are assembled with each other.

10. (Previously Presented) An inflator comprising:

a bottle having an axial direction and configured to be charged with a high-pressure gas;

a sealing plate positioned to seal the bottle at an orifice; and

a receiving member having an axial direction including a perforation structure for breaking the sealing plate,

wherein the bottle and receiving member are coupled together so that the axial directions are aligned and wherein the bottle and receiving member are prevented from moving apart in an axial direction by an engaged projection and groove; and

wherein the projection extends only partially around a periphery of the bottle or receiving member and is configured to move axially within the other of the receiving member or bottle prior to mating with the groove.

11. (Previously Presented) An inflator comprising:  
a bottle having an axial direction and configured to be charged with a high-pressure gas;  
a sealing plate positioned to seal the bottle at an orifice; and  
a receiving member having an axial direction including a perforation structure for breaking the sealing plate,  
wherein the bottle and receiving member are coupled together so that the axial directions are aligned and wherein the bottle and receiving member are prevented from moving apart in an axial direction by an engaged projection and groove; and  
wherein relative rotation of the bottle and the receiving member is prevented by a key positioned in a key groove.
12. (Original) The inflator of claim 10, wherein the projection is located on an outside of the bottle.
13. (Original) The inflator of claim 12, wherein the projection extends in a direction generally perpendicular to the axial direction of the bottle.
14. (Original) The inflator of claim 13, wherein an end of the bottle having the projection fits into an open end of the receiving member.
15. (Original) The inflator of claim 14, wherein the receiving member includes a guide groove configured to allow the bottle and the projection to move axially within the receiving member without engaging the groove.
16. (Previously Presented) The inflator of claim 15, wherein the receiving member and bottle are configured to be rotated relative to each other to allow the projection to engage the groove.
17. (Original) An inflator comprising:  
a bottle having an axial direction and configured to be charged with a high-pressure gas;  
a sealing plate positioned to seal the bottle at an orifice; and

a receiving member having an axial direction including a perforation structure for breaking the sealing plate,

wherein the bottle and receiving member are coupled together and prevented from rotating relative to one another by a key positioned in a key groove.

18. (Original) The inflator of claim 17, wherein a portion of the key groove is located on the receiving member.

19. (Original) The inflator of claim 17, wherein an end of the bottle extends into an end of the receiving member.

20. (Previously Presented) An inflator for an airbag module for a vehicle comprising:  
a bottle configured to be charged with a high-pressure gas;  
a sealing plate positioned to seal the bottle at an orifice; and  
a receiving member including a perforation structure for breaking the sealing plate,  
wherein the receiving member is configured to communicate with an airbag for a vehicle, and  
wherein one of the receiving member and the bottle includes a projection extending only partially around a periphery of the receiving member or the bottle and wherein the projection mates with a groove in the other of the receiving member or bottle when the bottle and receiving member are coupled together thereby preventing the receiving member and the bottle from moving apart.